WHITMAN COUNTY
GRANT NO. G1400494

CUMULATIVE IMPACTS ANALYSIS

for the Whitman County Shoreline Master Program

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CUMULATIVE IMPACTS ANALYSIS

WHITMAN COUNTY SHORELINE MASTER PROGRAM

1. INTRODUCTION

1.1 Background and Purpose

This Cumulative Impacts Analysis (CIA) is a required element of the Shoreline Master Program (SMP) update process. The State Master Program Approval/Amendment Procedures and Master Program Guidelines (SMP Guidelines; WAC 173-26-186(8)(d)) state that, "To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts." The CIA is intended to demonstrate that an SMP will not result in degradation of shoreline ecological functions over a 20-year planning horizon. This CIA can help the county make adjustments where appropriate in its proposed SMP if there are potential gaps between maintaining and degrading ecological functions.

In accordance with the SMP Guidelines, this CIA addresses the following:

i. "Current circumstances affecting the shoreline and relevant natural processes [Chapter 2 below and *Final Shoreline Analysis Report for Shorelines in Whitman County; the Cities of Colfax, Palouse, Pullman, Tekoa, and the Towns of Albion, Malden, and Rosalia* (The Watershed Company and Berk 2014)];

ii. Reasonably foreseeable future development and use of the shoreline [Chapter 3 below and *Shoreline Analysis Report*]; and

iii. Beneficial effects of any established regulatory programs under other local, state, and federal laws." [Chapter 4 below]

The CIA assesses the policies and regulations in the draft SMP to determine whether no net loss of ecological function will be achieved as new development occurs. The baseline against which changes in ecological function are measured is the current shoreline conditions documented in the *Shoreline Analysis Report*. For those projects or activities that result in degradation of ecological functions, the required mitigation must return the resultant ecological function back to the baseline. This is illustrated in Figure 1-1.

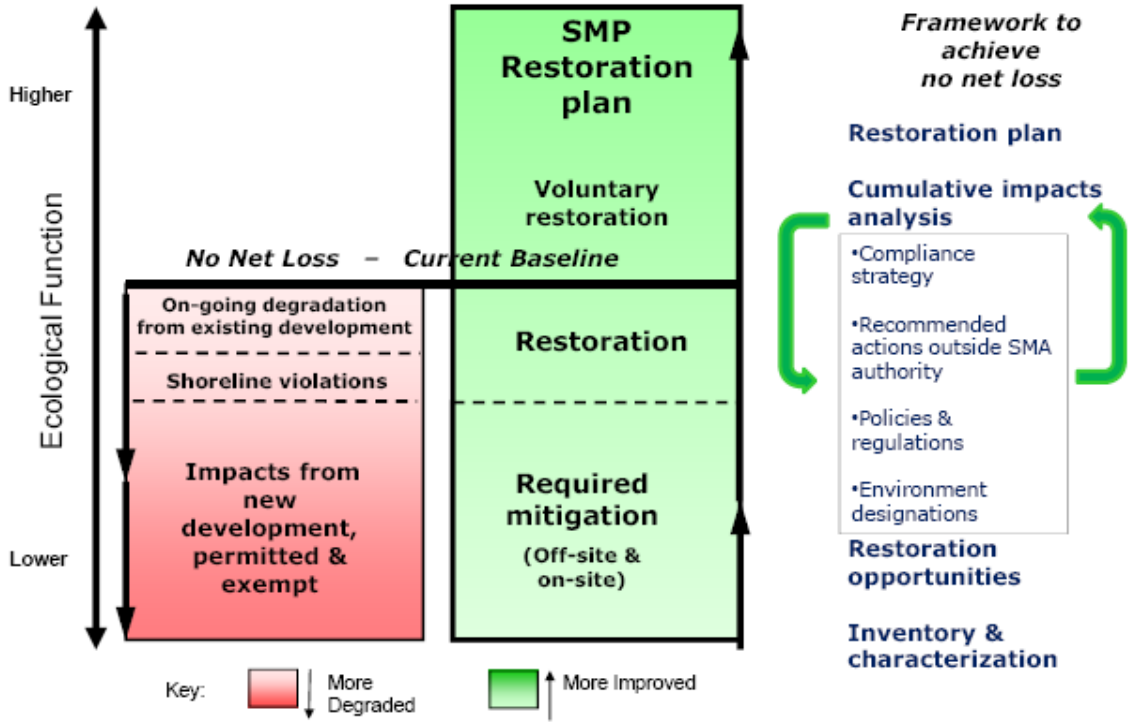

Figure 1-1. Framework for achieving no net loss of shoreline ecological functions (Source: Department of Ecology)

Despite SMP regulations that require avoidance, minimization, and mitigation for any unavoidable losses of function, some uses and developments cannot be fully mitigated. This could occur when mitigation is out-of-kind, meaning that it offsets a loss of function through an approach that is not directly comparable to the proposed impact. A loss of functions may also occur when impacts are sufficiently minor on an individual level, such that mitigation is not required, but are cumulatively significant. Unregulated activities (such as operation and maintenance of existing legal developments) may also degrade baseline conditions. Additionally, the Whitman County SMP applies only to activities in shoreline jurisdiction (see Figure 1-2), yet activities upland of shoreline jurisdiction or upstream in the watershed may have offsite impacts on shoreline functions.

Together, these different project impacts may result in cumulative, incremental, and unavoidable degradation of the overall baseline condition unless additional restoration of ecological function is undertaken. Accordingly, the *Shoreline Restoration Plan* (The Watershed Company 2015) is intended to be a source of ecological improvements implemented voluntarily that may help to bridge a gap between minor cumulative, incremental, and unavoidable damages and ensure no net loss of shoreline ecological functions.

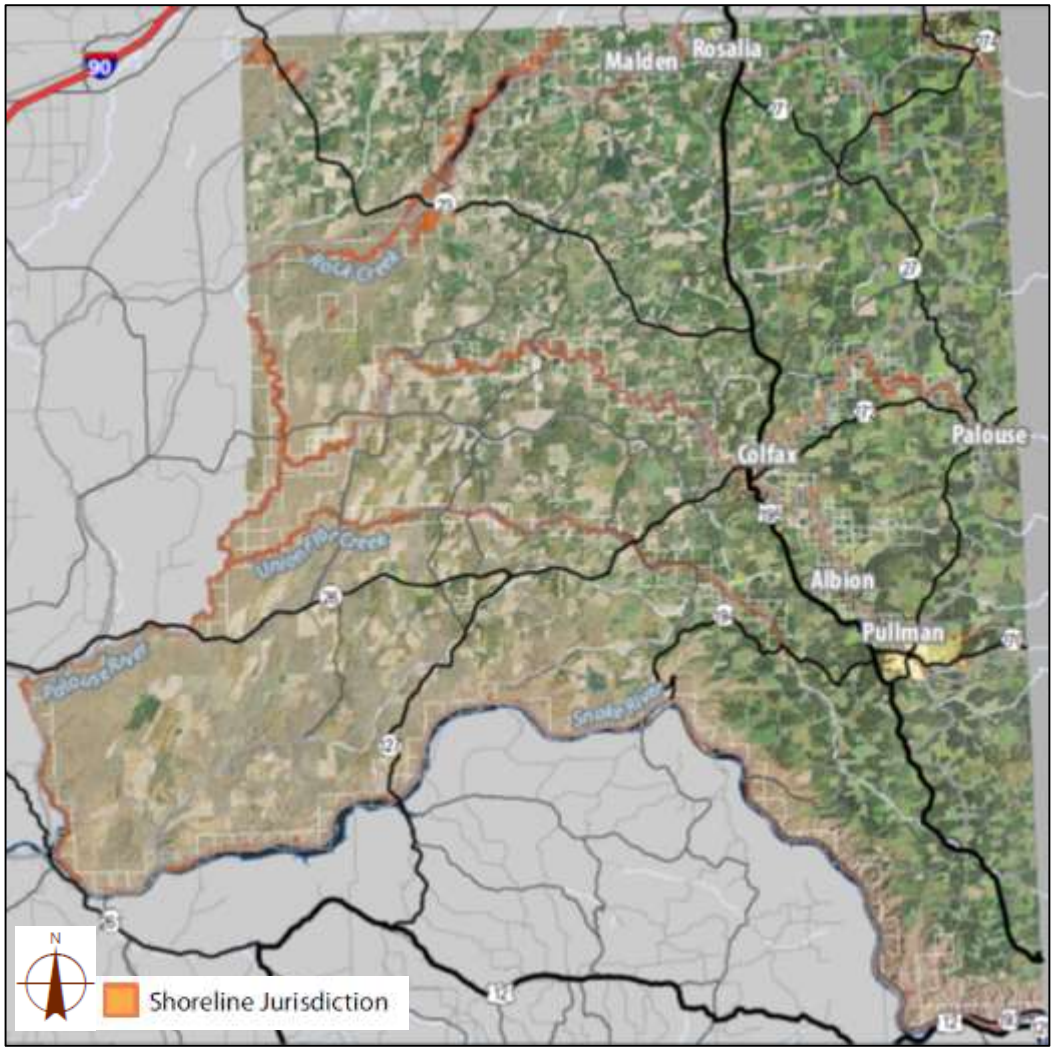

Figure 1-2. Whitman County shoreline jurisdiction

1.2 Approach

This CIA was prepared consistent with direction provided in the SMP Guidelines as described above. Existing conditions were first evaluated using the information, both textual and graphic, developed and presented in the *Shoreline Analysis Report*. Likely development identified in the *Shoreline Analysis Report* was addressed further to understand the extent, nature, and general location of potential impacts.

The effects of likely development were then evaluated in the context of SMP provisions, as well as other related plans, programs, and regulations. For the purpose of evaluating impacts, areas with a likelihood of high densities of new development or redevelopment (e.g., ports) were evaluated in greatest detail. Cumulative impacts were analyzed quantitatively where possible. A qualitative approach was used where specific details regarding redevelopment likelihood or

potential were not available at a level that could be assessed quantitatively or the analysis would be unnecessarily complex to reach a conclusion that could be derived more simply.

2. SUMMARY OF EXISTING CONDITIONS

The following summary of existing conditions is based on the *Shoreline Analysis Report*. More detailed information on specific shoreline areas is provided in the *Shoreline Analysis Report*.

2.1 Palouse (WRIA 34)

2.1.1 Ecological

The Palouse watershed covers the majority of Whitman County. The Palouse River originates in the Bitterroot Mountains in northern Idaho, and flows westerly into Whitman County before joining the Snake River at the Whitman/Franklin County line. The topography of the Palouse watershed transitions from mountainous terrain in Idaho to rolling hills composed of basalt covered with loess in the central portion of the watershed. The far western portion of the watershed is in an area called the Channeled Scablands. This area was shaped by massive floods over the past million years, which left behind exposed channels of the underlying basalt amongst islands of loess (HDR and EES 2007).

Precipitation primarily occurs in the winter months, and ranges from 10 inches in the west to 50 inches in the eastern portion of the watershed (HDR and EES 2007). Many of the smaller stream channels are dry in the summer. Major tributaries in the watershed include the North and South Forks, Rebel Flat Creek, Rock Creek, Pine Creek (photo to right), Union Flat Creek and Cow Creek. Several lakes occur in the Palouse Watershed, mostly in the Cow Creek and Rock Creek subbasins. Many of the lakes are natural depressions with basalt bottoms and no outlets (HDR and EES 2007). Extensive wetlands are present in the Rock Creek and North Fork Palouse subbasins.

Historically, the dominant vegetation in the Palouse watershed was a bunchgrass association. Much of that vegetation has been converted to dryland agriculture or altered by rangeland uses. Soil erosion resulting from storm water runoff has been a continuing problem throughout WRIA 34 as a result of land conversions to agriculture. An estimated 40 percent of the topsoil in the Palouse has been lost to erosion during this time (HDR and EES 2007). Most livestock grazing occurs in the westernmost portion of the basin, within the Channeled Scablands. Urban development makes up a small portion of the watershed; however, several cities and towns are located directly adjacent to the Palouse River and its tributaries. Riparian areas have been significantly altered by land use in the South Fork Palouse subbasin, and many small intermittent streams have been converted to drainage ditches throughout the North and South Fork subbasins.

Water quality concerns are primarily from non-point sources throughout most of the watershed, including erosion, livestock, fertilizers, and septic systems, which contribute sediment, fecal coliforms, and nutrients. Temperature is also a concern in many of the waterbodies in the watershed.

Potential point sources of pollutants are particularly significant in the South Fork Palouse River, where municipal wastewater discharges from the City of Pullman and the City of Moscow, Idaho contribute nearly all of the summer flows (HDR and EES 2007). In 1997, the South Fork was listed as impaired by elevated levels of ammonia; however, the City of Pullman and the City of Moscow upgraded their wastewater treatment facilities, such that water quality standards are now being met on the South Fork (HDR and EES 2007).

Consumptive water uses are not expected to change significantly within the watershed, except in the City of Pullman, where municipal, domestic, and university water demand is expected to increase by approximately 45 percent between 2006 and 2028 (HDR and EES 2007).

Although there are no man-made dams on the Palouse River, the 185-foot Palouse Falls, approximately 6 miles upstream from the River's confluence with the Snake River, prevents anadromous salmon passage (Golder Associates, Inc 2009). There are no ESA-listed salmonids or other listed aquatic species above Palouse Falls. Resident fish species above the Falls include rainbow trout, brown trout, smallmouth bass, sculpin, largescale sucker, northern squawfish, shiner perch and speckled dace (HDR and EES 2007). Trout are less common in the lower portions of the watershed, presumably as a result of temperature and water quality constraints in the lower watershed. Rainbow trout have been stocked in Rock Lake, and Kokanee salmon that are annually stocked into Chapman Lake in Spokane County are found downstream as far as Rock Lake (HDR and EES 2007). Various warm-water fish are also found in many of the lakes in the watershed.

Throughout much of the Palouse watershed in Whitman County, riparian forest and shrub vegetation is limited. This occurs as a combination of naturally limited water sources, the basalt landscape, and topography. Additionally, riparian vegetation is often limited as a result of ongoing agricultural activity adjacent to the watercourse. Some reaches, such as the lower reaches of the Palouse (photo above, Ecology 2007), are constrained by cliffs, which limit hydrologic, hyporheic, and vegetative functions, yet provide unique upland habitat. Other areas have broad floodplains and floodways, which frequently support ongoing agricultural uses. Extensive associated wetlands are also present in the watershed, particularly associated with Lavista Lake and Tule Lake.

Road and railroad infrastructure near, and in some cases crossing, the shoreline waterbodies may limit wildlife corridors and contribute to water quality degradation.

2.1.2 Land Use

Existing and Future Land Use

Agriculture is the dominant shoreline land use in the Palouse watershed in Whitman County (94% of classified lands). Additionally, a majority (53%) of those agricultural lands have been classified under 83.84 RCW, indicating they are likely to remain in agricultural use. Open space (classified under 84.34 RCW) accounts for another 5 percent (780 acres) of shoreline lands. Other shoreline land uses include undeveloped land (0.5% or 80 acres) and single family residential (0.1 percent or 18 acres). Manufacturing, recreational, and utilities account for less than 10 acres of shoreline land use.

Given the predominance of agricultural uses in the watershed, few changes in land use are expected. Existing structures may be repaired, but the overall trend for shoreline use along the river will be to remain in agricultural use. Potential changes to shoreline land use in the Palouse watershed are described below.

The Town of Rosalia has been completing updates to its wastewater treatment facility, some of which may be located north of town within the unincorporated County. The Town is

developing a wetland mitigation plan that may include mitigation activities north of Town in the County along Pine Creek.

Some improvements at Klemgard County Park along Union Flat Creek are possible, as the 2004-2009 Whitman County Parks and Recreation Comprehensive Plan (2004) outlines a number of renovations, including replacing the bridge crossing and roofing the large picnic shelter, to improve the Park for visitors.

Zoning

Shoreline lands in the Palouse watershed are largely zoned agricultural with some small areas zoned for residential and industrial uses adjacent to the City of Pullman (<1 acre each). An area north of Colfax is classified as undeveloped land, and is adjacent to other industrial uses. However, the area in the County is zoned Agriculture. A change of use would require a rezone.

Ownership

Land within shoreline jurisdiction is primarily privately owned (83%).

2.2 Middle Snake (WRIA 35)

2.2.1 Ecological

The Middle Snake River includes areas in Idaho and Oregon, and extends downstream to the confluence of the Palouse and Snake Rivers. The Middle Snake Basin is semi-arid, with annual precipitation ranging from 5 inches in the lowlands up to 45 inches in the Blue Mountains (Kuttel 2002). Stream flows are controlled by the hydropower system, as well as seasonally variable flows in smaller tributaries corresponding with winter precipitation and spring snowmelt. The Snake River receives inflow from groundwater aquifers along its reach, including upper aquifers and deeper basalt aquifers.

Historically, the Middle Snake River watershed was covered by prairie and canyon grasslands and shrub-steppe at low to mid-elevations. Forests dominated as elevation and proximity to the Blue Mountains increased (Kuttel 2002). As a result of land use changes and development, much of the prairie, shrub-steppe, and riparian habitats have been lost or modified. Conversion of perennial bunchgrass prairies to production of annual crops has led to significant quantities of fine sediment erosion and deposition in WRIA 35 streams (Kuttel 2002).

Floodplains throughout WRIA 35 have been converted to agricultural and residential use (Kuttel 2002). This development has resulted in channel straightening, armoring, and simplification (Kuttel 2002).

The hydrology along the Snake River has been severely altered by the installation of hydroelectric dams. The Corps operates four dams along the lower and middle Snake River. The dams were built to provide hydroelectric power, river navigation, irrigation water, and flood control. The upper two dams, Little Goose Dam and Lower Granite Dam, are located along Whitman County's shorelines. The dams on the Lower Snake and Columbia Rivers impound water, creating shallow reservoirs that fill the width of the steep-sided canyons. The Little Goose Dam was constructed and is owned by the Corps. The Dam was completed in 1970. Waters behind the dam form Lake Bryan, which extends upstream about 37.2 miles and provides navigation to Lower Granite Lock and Dam. The Lower Granite Dam was completed in 1984. The lake created by the dam, known as Lower Granite Lake, extends upstream on the Snake River about 40 miles to Lewiston.

Water quality in portions of the Snake River is impaired by several pesticides, dioxin, PCBs, temperature and dissolved oxygen.

The Snake River Basin historically produced substantial runs of spring Chinook, fall Chinook, coho, and sockeye salmon, and steelhead; however, the abundance of these species decreased substantially through the 1900s, primarily as a result of fish passage barriers, poaching, and changes to habitat (Kuttel 2002). In the case of Snake River sockeye salmon, three of the four main sockeye-rearing lakes were poisoned for decades in an effort to reduce competition with Kamloops rainbow trout (Kuttel 2002). Snake River coho salmon have been considered extinct since the early 1980s. Snake River spring/summer Chinook, fall Chinook, and steelhead are listed as federally threatened. Snake River sockeye salmon are federally listed as endangered.

The Middle Snake River primarily serves as a migratory corridor for these species. Fall Chinook salmon also spawn in the Snake River downstream from Hells Canyon Dam, with limited spawning in the tailraces of the four lower Snake River Dams and the lower portions of the Grande Ronde, Tucannon, and Palouse Rivers (Kuttel 2002).

The channel in most areas has steeply sloped banks or is within steep-sided canyons with limited vegetation. Armoring and natural steep cliffs limit flow attenuation and instream habitat diversity in the lower reaches. Hydrologic, vegetative, riparian habitat, and hyporheic functions are higher in the upper reaches, outside of the industrial reach.

The industrial reach is affected by the two dams and industrial development along the Snake River. Dam operations retain sediment and result in seasonal and daily fluctuations in water levels. Industrial development and associated armoring limits shoreline functions and development and natural cliffs limit vegetative and hyporheic functions. Lack of vegetation and development limits terrestrial wildlife habitat.

2.2.2 Land Use

Existing and Future Land Use

Existing land use within shoreline jurisdiction is a mix of agriculture, water areas, manufacturing, food and kindred products, and open space. The most prevalent use along the River is transportation. The BNSF railway occupies a 20- to 30-foot-wide right-of-way within shoreline jurisdiction from the eastern County boundary to a crossing between Lyons Ferry and the Tucannon River (39 miles). SR 194 is also located within shoreline jurisdiction. It parallels the railroad from the County's boundary to Almota (25 miles of roads and three bridges in shoreline jurisdiction). Other uses include the in-water and upland facilities related to the Lower Granite and Little Goose Dams, three Port of Whitman County sites, and several public access and/or recreational sites. Nearly all of the land within shoreline jurisdiction is publicly owned.

As noted above, the major land uses include Corps dams and associated facilities; the Port's facilities at Wilma (photo to the right), Almota and Central Ferry; and the roads and railways. Ongoing maintenance and operation of the dams and associated facilities is expected. Siltation behind the dams has raised concerns about flooding, particularly in Lewiston, Idaho, where downtown is protected by a system of levees. The Corps issued a Programmatic Sediment Management Plan and Draft Environmental Impact Statement in 2012. The Corps' preferred alternative included dredging and dredged material management, along with other sediment and system management measures. Alternatives are currently being evaluated.

There are unleased areas at the Port's Wilma site that may be developed. Based on conversations with Port staff and site visits, there are current lease holders that may change uses or develop new facilities, but specific plans are not known. The Central Ferry site has undeveloped Port properties which may be developed for new industrial uses during the planning horizon of the Comprehensive Plan. However, the Port has noted that lack of workforce due to the site's isolation represents a challenge to new development. The Port's

Comprehensive Plan includes a list of planned improvements at each of its on-water sites. Listed improvement that could potentially occur in or affect shoreline resources include:

Wilma Site

- Possible rezone of upland land trade acreage
- Obtain more land from Corps west of Wilma
- Improve and repair the public port site dock and booms
- Continue to aggressively market to and potentially develop or improve vacant land for potential tenants

Almota Site

- Pave gravel roads

Central Ferry Site

- Acquire additional lands near present site as the need arises, either west of Highway 127 or upland of the existing Port properties, outside of shoreline jurisdiction.
- Continue to level, prepare, and improve undeveloped sites as needed.

Zoning

Upland shoreline jurisdiction in the Industrial reach is zoned Heavy Industrial (Port of Whitman County properties); the remaining reaches are zoned Agricultural by the County.

Ownership

The shorelines of the Middle Snake are primarily publically owned. The Federal government is a 92.8% owner, with the majority of this land managed by the Department of Defense and a small portion managed by BLM. Washington State owns 7.2% of the shorelines in the Middle Snake, mostly managed under DNR, with a small portion managed by Washington State University.

Transportation

There is little road transportation infrastructure within shoreline jurisdiction of the Middle Snake. However, there is rail infrastructure that runs along the shoreline. There are 17 bridges in jurisdiction in the Middle Snake watershed.

2.3 Hangman (Latah) Creek (WRIA 56)

2.3.1 Ecological

The Hangman Creek watershed originates in the mountains in Idaho, and flows south through the Palouse region in Whitman County.

Hangman Creek flows through sedimentary hills of sand, gravel and cobbles deposited during the Lake Missoula floods (Spokane County Conservation District (SCCD) 2005). Precipitation in the Hangman Creek watershed ranges from 18 inches per year at the mouth to over 40 inches per year in the southeastern headwaters (SCCD 2005). Precipitation occurs primarily in the winter, and summers are dry. As such, flows are highest (over 200 cubic feet per second [cfs] at the State line) in the winter months, and lowest (less than 1 cfs at the State line) in late summer. In upper Hangman Creek, the underlying aquifer occurs within the Columbia River Basalts.

Today, agriculture is the predominant land use in the upper and middle reaches of the Hangman Creek watershed. Removal of riparian vegetation has resulted in increased bank erosion and stream siltation. Forestry practices in the upper watershed have altered stream flows, increasing peak flows and lowering summer low-flows. The Lower Hangman Creek watershed supports significant urban development in and around the City of Spokane, and this area is expected to undergo 50 percent of the City of Spokane's urban growth in the next ten years (SCCD 2005).

Water quality is a concern in Hangman Creek. It is on the State's list of impaired waters (Category 5) for dissolved oxygen and has a Category 4a listing (has an approved Total Maximum Daily Load [TMDL] in place) for bacteria, temperature and turbidity.

Riparian corridors along Hangman Creek support a variety of wildlife, including white-tailed deer, Rocky Mountain elk, moose, coyote, river otter, beaver, meadow vole, and deer mice (SCCD 2005). Birds commonly found in riparian habitats include great blue heron, kingfisher, yellow warbler, mallard, cinnamon teal, green-winged teal, wood duck, common merganser, western bluebirds, red-winged blackbirds, magpies and Canada geese. Bald eagles may migrate through the Hangman Creek riparian corridor, but no known nesting sites have been reported (SCCD 2005).

Native trout and salmon populations that were once documented in Hangman Creek have decreased substantially as a result of dams, loss of habitat, and water quality degradation. Corresponding with habitat degradation and temperature increases, more tolerant fish species, such as sculpin and redside shiners, have apparently expanded their distribution and increased their population (SCCD 2005).

Within Whitman County, Hangman Creek includes mapped floodplain and floodway. Little armoring and no dams or overwater structures are present. However the channel structure is generally simple, with few backwater areas, meanders or wetland. Riparian vegetation is generally very narrow and cultivated crops dominate the shorelands.

2.3.2 Land Use

Existing and Future Land Use

Ninety nine percent (639 acres) of the area in shoreline jurisdiction is currently in agricultural use. The remaining one percent has been designated under chapter 84.34 RCW as open space. The entire shoreline area along Hangman Creek has been designated under 83.84 RCW, indicating it is likely to remain in agricultural use. Existing structures may be repaired, but the overall trend for shoreline use along the creek will be to remain in agriculture.

Zoning

The shoreline area within Hangman Creek is completely zoned Agriculture by the County.

Ownership

The shorelines of Hangman Creek are primarily privately owned. Approximately seven acres on the west side of the river, downstream from Tekoa, are owned by the Washington Department of Natural Resources.

Transportation

There is little road or transportation infrastructure within shoreline jurisdiction of Hangman Creek. Transportation facilities are concentrated near the City of Tekoa.

3. EFFECTS OF ESTABLISHED PROGRAMS

3.1 Current County Regulations and Programs

All development activity within the county is required to comply with the Whitman County Code (WCC). Provisions in the WCC that potentially affect how future development is implemented and the extent of potential ecological impacts include critical area regulations, zoning, and stormwater management standards in the Hydrology Manual. The following are descriptions of these relevant regulations and how they help to maintain shoreline functions.

3.1.1 Critical Areas Regulations

County regulations applicable to critical areas are detailed in Whitman County Code (WCC) Chapter 9.05. These regulations were adopted in 1994, and they were most recently amended in 2014. The regulations specify minimum Riparian Habitat Area buffer widths of 150 feet to 250 feet depending on the stream type (WCC 9.05B.050(B)(30(b)). The regulations also require wetland buffers between 25 and 250 feet based on wetland classification and intensity of

proposed land use (WCC 9.05A.050). The County's Critical Areas regulations also apply to geologically hazardous areas, critical aquifer recharge areas, and frequently flooded areas.

3.1.2 Zoning Code

County zoning standards direct the location of uses, building bulk, and scale. These standards are important in planning for future growth and focusing development in a sustainable manner. Within the agricultural zone, which covers the majority of shorelands in the County, as identified in Section 2, one single-family dwelling is allowed per parcel (WCC 19.10). Within shoreline jurisdiction, there are no opportunities for subdivisions of four or more units under the current zoning code.

3.2 State Agencies/Regulations

Aside from the Shoreline Management Act (SMA), state regulations most pertinent to moderation of ecological impacts of development in the county's shoreline include the State Hydraulic Code, the Growth Management Act, State Environmental Policy Act (SEPA), tribal agreements and case law, and Water Resources Act. A variety of agencies (e.g., Washington Department of Ecology, Washington Department of Fish and Wildlife, Washington Department of Natural Resources) are involved in implementing these regulations or managing state-owned lands. The Department of Ecology reviews all shoreline projects that require a shoreline permit, but has specific regulatory authority over Shoreline Conditional Use Permits and Shoreline Variances. Other agency reviews of shoreline developments are typically triggered by in- or over-water work, discharges of fill or pollutants into the water, or substantial land clearing. During the comprehensive SMP update, the County has considered other state regulations to ensure consistency as appropriate and feasible with the goal of streamlining the shoreline permitting process. A summary of some of the key state regulations by agency responsibilities follows.

3.2.1 Washington Department of Natural Resources

Projects on state-owned aquatic lands may be required to obtain an Aquatic Use Authorization from Washington Department of Natural Resources (WDNR) and enter into a lease agreement. WDNR will review lease applications to determine if the proposed use is appropriate, and to ensure that proposed mitigation for impacts to aquatic resources are sufficient.

WDNR is also responsible for administering the Surface Mining Act. The Act requires a permit for each mine that: 1) results in more than 3 acres of mine-related disturbance, or 2) has a high-wall that is both higher than 30 feet and steeper than 45 degrees. A reclamation plan is required that describes how the site will be restored following mining activity to maintain stable slopes, diverse landscape features, and dense, native vegetation. In coordination with SMP standards,

the Act helps ensure that mining activities do not result in long-term adverse effects on shoreline functions.

3.2.2 Washington Department of Ecology

The Washington Department of Ecology may review and condition a variety of project types, including any project that needs a permit from the U.S. Army Corps of Engineers (see below), any project that requires a Shoreline Conditional Use Permit or Shoreline Variance, and any project that disturbs more than 1 acre of land. Project types that may trigger Ecology involvement include pier and shoreline modification proposals and wetland or stream modification proposals, among others. Ecology's three primary goals are to: 1) prevent pollution, 2) clean up pollution, and 3) support sustainable communities and natural resources (http://www.ecy.wa.gov/about.html). Ecology may comment on local SEPA review if it is an agency of jurisdiction.

3.2.3 Washington Department of Fish and Wildlife

Via the Hydraulic Code (chapter 77.55 RCW), the Washington Department of Fish and Wildlife (WDFW) has the authority to review, condition, and approve or deny "any construction activity that will use, divert, obstruct, or change the bed or flow of state waters." Practically speaking, these activities include, but are not limited to, installation or modification of piers, shoreline stabilization measures, culverts, and bridges. WDFW typically conditions such projects to avoid, minimize, and/or mitigate for damage to fish and other aquatic life, and their habitats.

3.3 Federal Agencies/Regulations

Federal review of shoreline development is in most cases triggered by in- or over-water work, or discharges of fill or pollutants into the water. Depending on the nature of the proposed development, federal regulations can play an important role in the design and implementation of a shoreline project, ensuring that impacts to shoreline functions and values are avoided, minimized, and/or mitigated. A summary of some of the key federal regulations follows.

3.3.1 Clean Water Act

Major components of the Clean Water Act include Section 404, Section 401, and the National Pollutant Discharge Elimination System (NPDES).

Section 404 provides the Corps, under the oversight of the U.S. Environmental Protection Agency, with authority to regulate "discharge of dredged or fill material into waters of the United States, including wetlands" (http://www.epa.gov/owow/wetlands/pdf/reg_authority_pr.pdf). The extent of the Corps' authority and the definition of fill have been the subject of considerable legal activity. As

applicable to the County's shoreline jurisdiction, however, it generally means that the Corps must review and approve many activities in streams, lakes and wetlands. These activities may include wetland fills, stream and wetland restoration, and culvert installation or replacement, among others. The Corps requires projects to avoid, minimize, and compensate for impacts.

A Section 401 Water Quality Certification is required for any applicant for a federal permit for any activity that may result in any discharge to waters of the United States. States and tribes may deny, certify, or condition permits or licenses based on the proposed project's compliance with water quality standards. In Washington State, the Department of Ecology has been delegated the responsibility by the U.S. Environmental Protection Agency for managing implementation of this program.

The NPDES is similar to Section 401, and it applies to ongoing point-source discharge. Permits include limits on what can be discharged, monitoring and reporting requirements, and other provisions designed to protect water quality. Examples of discharges requiring NPDES permits include municipal stormwater discharge, wastewater treatment effluent, or discharge related to industrial activities or aquaculture facilities.

3.3.2 Endangered Species Act (ESA)

Section 9 of the ESA prohibits "take" of listed species. Take has been defined in Section 3 as: "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The take prohibitions of the ESA apply to everyone, so any action that results in a take of listed fish or wildlife would be a violation of the ESA and is strictly prohibited. Per Section 7 of the ESA, activities with potential to affect federally listed or proposed species and that either require federal approval, receive federal funding, or occur on federal land must be reviewed by the National Marine Fisheries Service (NOAA Fisheries) and/or U.S. Fish and Wildlife Service (USFWS) via a process called "consultation." Activities requiring a Section 10 or Section 404 permit also require such consultation if these activities occur in waterbodies with listed species. Section 4(f) of the ESA directs the Services to develop or appoint teams to develop and implement recovery plans for threatened and endangered species. Whitman County is a member of the Snake River Salmon Recovery Board, and County staff contributed to the development of the 2011 Snake River Salmon Recovery Plan for Southeast WA (Snake River Salmon Recovery Board 2011).

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act of 1996 is administered by the National Marine Fisheries Service to foster and protect commercial and recreational fisheries of designated species that "contribute to the food supply, economy, and health of the Nation

and provide recreational opportunities" (18 U.S.C. §1801-a). In Whitman County, Chinook salmon and steelhead are the two designated species. The primary avenue for on-the-ground management of those species is designation and protection of "essential fish habitat" (EFH), which is "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The National Marine Fisheries Service incorporates consideration of EFH into the same process under which projects are reviewed per the Endangered Species Act.

3.3.3 Rivers and Harbors Act

Section 10 of the federal Rivers and Harbors Appropriation Act of 1899 provides the Corps with authority to regulate activities that may affect navigation of "navigable" waters. The only designated "navigable" water in Whitman County is the Snake River. Proposals to construct new or modify existing over-water structures (including bridges), to excavate or fill, or to "alter or modify the course, location, condition, or capacity of" navigable waters must be reviewed and approved by the Corps.

3.3.4 Northwest Power Act

The Northwest Power Act was passed in 1980 as a component of the Federal Power Act. The Act seeks to ensure that the hydropower production is balanced with the maintenance of healthy fish and wildlife populations in the Columbia Basin, including salmon and steelhead. The Act establishes the Northwest Power and Conservation Council and directs the Council to adopt a regional energy conservation and electric power plan and a program to protect, mitigate and enhance fish and wildlife in the Columbia and Snake Rivers and their tributaries.

3.4 Shoreline Restoration Plan

One of the key objectives that the SMP must address is "no net loss of ecological functions necessary to sustain shoreline natural resources" (Ecology 2011). Although the implementation of restoration actions to restore historic functions is not required by SMP provisions, the SMP Guidelines state that "master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program" (WAC 173-26-201(2)(f)).

The *Shoreline Restoration Plan* represents a vision for restoration that will be implemented over time, resulting in a gradual improvement over the existing conditions. Although the SMP is intended to achieve no net loss of ecological functions through regulatory standards alone, practically, an incremental loss of shoreline functions at a cumulative level may occur through minor, exempt development; illegal development; failed mitigation efforts; or a temporal lag between the loss of existing functions and the realization of mitigated functions. The *Shoreline*

Restoration Plan, and the voluntary actions described therein, can be an important component in making up that difference in ecological function.

Major *Shoreline Restoration Plan* components that are expected to contribute to improvement in ecological functions in the foreseeable future are summarized below:

These include projects to:

- Restore instream habitat complexity
- Setback dikes
- Address impacts to existing riparian conditions by implementing livestock fencing and other actions that remove activities from the riparian corridor
- Implement of best management practices to improve water quality conditions
- Implement TMDL actions to improve water quality conditions

4. APPLICATION OF THE SMP

This section describes how the proposed SMP protects shoreline functions. The following components of the SMP are integral to ensuring no net loss of shoreline functions. Each of these components is discussed in further detail below.

- Shoreline environment designations are based on existing shoreline conditions. Allowed uses focus high-intensity development in areas with a high level of existing alterations, while limiting future uses in areas where ecological functions and processes are more intact.
- SMP standards require applicants to avoid, minimize, and then compensate for unavoidable impacts to shoreline functions. Where SMP standards do not provide specific, objective measures that clarify avoidance, minimization, and mitigation measures, a mitigation sequencing analysis is required.
- Shoreline critical areas regulations are consistent with recommended state guidance to maintain ecological functions.
- Specific policies and regulations governing shoreline uses and modifications ensure that potential impacts are regulated to avoid a net loss of ecological function, while also meeting

the requirements of the Shoreline Management Act pertaining to public access, prioritization of shoreline uses, and private property rights.

4.1 Environment Designations

The assignment of environment designations can help minimize cumulative impacts by concentrating development activity in lower functioning areas or areas with more intensive existing development that are not likely to experience significant function degradation with incremental increases in new development or redevelopment. According to the SMP Guidelines (WAC 173-26-211), the assignment of environment designations must be based on the existing use pattern, the biological and physical character of the shoreline, and the goals and aspirations of the community as expressed through a comprehensive plan.

Consistent with SMP Guidelines, the County's environment designation system is based on the existing use pattern, the biological and physical character of the shoreline, and community interests. The *Shoreline Analysis Report* provided information on shoreline conditions and functions that informed the development of environment designations. The proposed upland environment designations include: Rural Industrial/Port, Shoreline Parks and Rural Conservancy, generally listed in order by decreasing intensity of allowed use. All areas waterward of the OHWM are designated Aquatic. Criteria for each environment designation are provided in Table 4-1.

Table 4-1. Environment designation criteria

Environment Designation	Classification Criteria
Rural Industrial/Port	Industrial or commercial areas of intensive rural development if they currently support concentrations of commerce, transportation, power production, or navigation; or are suitable and planned for intensive water-oriented uses.
Shoreline Parks	Areas where any of the following apply: • They are within existing or planned public parks or public lands intended to accommodate public access and recreational developments; • They are suitable for water-related or water-enjoyment uses; • They are open space, floodplain or other sensitive areas that should not be more intensively developed; • They have potential for ecological restoration; • They retain important ecological functions, even though partially developed; or • They have the potential for development that is compatible with ecological restoration.
Rural Conservancy	Those areas characterized by: • Agricultural lands of long-term commercial significance and low-density rural home sites;

Environment Designation	Classification Criteria
	• Commercial agricultural potential; or • Parallel roads, railroads, canals, levees or other alterations in shoreline jurisdiction that limit shoreline ecological functions.
Aquatic	Lands waterward of the ordinary high-water mark.

Ninety-six percent of the shoreline area in Whitman County is designated as Rural Conservancy. The remaining two percent is divided between Shoreline Parks and Rural Industrial/Port (Figure 4-1). Whitman County's proposed environment designations reflect the generally rural-agricultural nature of the County's unincorporated area. The Rural Industrial/Port designation appropriately focuses potential industrial development activity in existing disturbed areas with higher levels of alterations and lower ecological functions compared to other reaches within the county. Those existing disturbed shorelines are not likely to experience significant function degradation with incremental increases in new development.

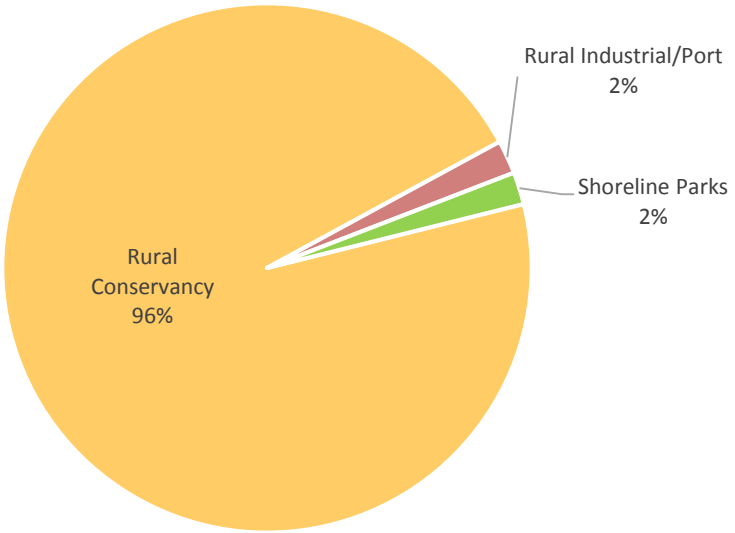

Figure 4-1. Distribution of Upland Environment Designations by Area

4.2 Effects of Critical Areas Regulations

The SMP includes policies and regulations to avoid cumulative effects to critical areas. Mitigation sequencing is required for all shoreline critical areas, including wetlands, rivers and creeks, critical aquifer recharge areas, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas. SMP regulations proposed for wetlands, rivers, and creeks include standard buffer areas, which are discussed in greater detail below.

4.2.1 Wetlands

The County's wetland standards require mitigation sequencing for impacts to wetlands and wetland buffers. The proposed wetland buffer widths are consistent with Ecology's "*Wetlands in Washington State-Volume 2: Guidance for Protecting and Managing Wetlands*," modified for use with the 2014 Washington State Rating System for Eastern Washington (Granger et al. 2005). Buffer averaging is permitted provided that the buffer is increased adjacent to the higher-functioning area of habitat or more-sensitive portion of the wetland and decreased adjacent to the lower-functioning or less-sensitive portion, and that minimum buffer widths in Subsection 19.63.703(E)(1)(d)(iv) are met. The proposed SMP standards should ensure that wetland functions are maintained over time.

4.2.2 Rivers and Creeks

The proposed SMP establishes buffer and setback regulations on shorelines of the state that were developed to be consistent with existing conditions, as generally described as part of the *Shoreline Analysis Report*. In the Rural Conservancy environment, the shoreline buffer is 150 feet, or the distance from the OHWM to the waterward edge of a parallel road or railroad on the Snake River, whichever is lower. In the Rural Industrial/Port environment, the buffer is 50 feet or the lesser of the distance to the waterward edge of an existing feature that disrupts shoreline functions (i.e. road, railroad, fill, wastewater lagoons). In the Shoreline Parks environment, the buffer is 150 feet on the Palouse River and 30 feet on the Snake River. However, there is an allowance for water-oriented public access and recreation structures in buffers provided the applicant can demonstrate that the design applies mitigation sequencing and complies with other standards in the SMP. These standards help ensure that new uses are located, designed, and operated to minimize effects to water quality and existing riparian features, while still allowing for improvements to shoreline public access.

For non-shoreline tributaries within shoreline jurisdiction, buffers are required ranging from 50-150 feet depending on the water type. Buffers on non-shoreline streams within shoreline jurisdiction help ensure that riparian functions are maintained at ecologically significant confluence areas.

4.3 Mitigation Sequencing

The proposed SMP includes general regulations requiring projects to be designed, located, sized, constructed and maintained to achieve no net loss of shoreline ecological functions. Mitigation sequencing standards apply to all projects in shoreline jurisdiction. In some cases, specific provisions are applied by the SMP that stipulate objective standards for avoiding (e.g., placement), minimizing (e.g., size, materials, and design standards), and compensating for unavoidable impacts (e.g. specific planting requirements). Where these objective standards are

not specified in the SMP, a description of the analysis of mitigation sequencing is required with any shoreline application (Subsection 19.63.603(B)(3)). The application of mitigation sequencing standards should help ensure that shoreline uses and modifications achieve no net loss of shoreline ecological functions.

4.4 Effects of SMP Standards on Commonly Occurring Foreseeable Uses

As discussed previously, WAC 173-26-186(8)(d) directs local SMPs to evaluate and consider cumulative impacts of "reasonably foreseeable future development on shoreline ecological functions." Although future development may include other less common types of development, the location, timing, and impacts of less common uses and development projects are less predictable. WAC 173-26-201(3)(d)(iii) states:

> *For those projects and uses with unanticipatable or uncommon impacts that cannot be reasonably identified at the time of master program development, the master program policies and regulations should use the permitting or conditional use permitting processes to ensure that all impacts are addressed and that there is not net loss of ecological function of the shoreline after mitigation.*

As noted in Section 2, anticipated development in unincorporated Whitman County is expected to be limited in terms of location and extent. The most likely changes in shoreline development involve new industrial uses on established Port properties, dredging on the Snake River (likely a federal action not subject to the County's SMP), and upgrades to park facilities. In addition to these changes, replacements, repair, and maintenance of existing structures are likely to occur. Additionally, even without a change in use, some level of change to vegetation and shoreline modifications may be anticipated. The following discussion identifies the extent to which future changes to shoreline land uses and modification are anticipated, and it describes how the SMP would apply to each of these changes to help maintain no net loss of functions.

All of the potential new uses and modifications would be required to comply with the shoreline buffer provisions in Subsection 19.63.704(E)(2)(c).

4.4.1 Agriculture

Likelihood of development: As described in the *Shoreline Analysis Report*, the vast majority of the County's shorelines are in agricultural use. Given the zoning and land use trends in the County, these uses are expected to continue. Since the vast majority of land is presently in agricultural use, it is unlikely that additional lands will be converted to agriculture. However, it is possible, although not commonly anticipated, that existing agricultural lands could be converted to a non-agricultural use.

Application of the SMP: The SMP provisions do not apply to, limit, or require modification to ongoing agricultural activities. SMP provisions apply to new agricultural activities or expansion of such activities on land not meeting the definition of agricultural land, and conversion of agricultural lands to non-agricultural uses. In such cases, shoreline buffers consistent with Subsection 19.63.704(E), as well as other standards applicable to the proposed use and any proposed modifications would apply.

4.4.2 Aquaculture

Likelihood of development: No new aquaculture facilities are anticipated; however, it is possible that a new hatchery or associated rearing or transfer facility could be developed.

Application of the SMP: Any new aquaculture facility would need to be designed and located to avoid a net loss of ecological functions. Mitigation sequencing, as described above, would apply.

4.4.3 Boating Facilities

Likelihood of development: The Port of Whitman County Comprehensive Plan (Port of Whitman County 2010) identified improvement and repair of the public port site dock and booms on the Snake River. In addition, the repair, maintenance, and replacement of existing public and private overwater structures may be anticipated. Few, if any, new boating facilities are anticipated in the County's shorelines.

Application of the SMP: The SMP includes provisions to limit single family docks if joint-use dock opportunities are available (Subsections 19.63.803(B)(2)(b-d)). SMP provisions for overwater structures, ramps, and floats include standards that ensure that the location, design, and materials will minimize degradation of aquatic habitats (Subsections 19.63.803(B)(2-10)). If replacement, modification, or enhancement to an existing boating facility is proposed, proposals must provide impact mitigation at a minimum one-to-one ratio, by area, using one or more of a suite of potential mitigation actions (Subsection 19.63.803(B)(14)).

4.4.4 Commercial Development

Likelihood of development: Based on conversations with Port staff and site visits, there are current lease holders that may change uses or develop new facilities, but specific plans are not known. Development of new commercial uses on undeveloped Port lands is also possible. Development of commercial uses is most likely to occur on Port lands at Wilma, where there is developable land available, and the nearby commercial centers of Lewiston, Idaho and Clarkston, Washington, which may provide a suitable workforce.

Application of the SMP: Common effects of commercial development include increased impervious surfaces, increased traffic, and vegetation clearing.

Commercial development is permitted in all shoreline environment designations for visitor-serving uses and recreation concessions. It is also permitted in all environment designations for "other" water-dependent uses and "other" nonwater-dependent uses that are mixed-use projects including a water-dependent use. General nonwater-dependent commercial uses are prohibited in the Rural Conservancy designation, and conditional in the remaining designations. In nonwater-dependent commercial developments where the site is separated from the shoreline, development is permitted in all designations, except for Aquatic, where it doesn't apply.

Existing Port lands have little vegetation, and most lands have been graded, filled and armored. Under the proposed SMP, commercial development shall be located, designed, and constructed in a way that ensures no net loss of shoreline ecological functions and without significant adverse impacts to other preferred land uses and public access opportunities (Subsection 19.63.804(B)(7)).

4.4.5 Forest Practices

Likelihood of development: Forestry practices are not a common shoreline use in Whitman County, and future forest practices in shoreline jurisdiction are not anticipated.

Application of the SMP: All forest practices, including forest conversions, undertaken on shorelines shall comply with the applicable policies and provisions of the Forest Practices Act, RCW 76.09 as amended, and any regulations adopted pursuant thereto (WAC 222), as administered by the County (Subsection 19.63.805(B)(2)). The only shoreline environment where forest practices may occur is the Rural Conservancy designation.

4.4.6 In-Stream Structural Uses

Likelihood of development: Existing in-stream uses include the two Corps-owned dams and associated facilities on the Snake River, as well as a number of irrigation diversion and discharge structures in many waterbodies. No new major dams are anticipated; however, new irrigation diversion or discharge structures are likely. Maintenance and repair of existing structures is also anticipated.

Application of the SMP: In-stream structures are typically intended to modify flows, which can result in alterations to circulation patterns, water quality, and habitat access and conditions. Because the two major dams on the Snake River are in federal ownership, federal maintenance of those dams is not subject to the SMP.

The SMP would apply to any new non-federally owned diversion or discharge structure. Per Subsection 19.63.603(B)(1) in-stream structures shall comply with the Environmental Protection regulations in Section 16.63.603(B) and shall ensure no net loss of ecological function. All structures must be the minimum size necessary and unavoidable adverse impacts must be mitigated. In-stream structures must provide for the protection and preservation of ecosystem-wide processes, ecological functions, and cultural resources, including, but not limited to, fish and fish passage, priority habitats and species, other wildlife and water resources, shoreline critical areas, hydrogeological processes, and natural scenic vistas (19.63.806(B)(3)). In addition, natural in-water features, such as snags, uprooted trees, or stumps, shall be left in place unless it can be demonstrated that they are actually causing bank erosion or higher flood stages or pose a hazard to navigation or human safety (Subsection 19.63.807(B)(7)).

4.4.7 Mining

Likelihood of development: A single mining operation is found in shoreline jurisdiction at the Port of Central Ferry. Significant expansion of mining uses are not anticipated in shoreline jurisdiction.

Application of the SMP: Commercial mining has the potential to significantly impact erosion processes, water quality, and instream habitat. Any new mining operation in shoreline jurisdiction must demonstrate the need for a shoreline-based location rather than other upland locations (Subsection 19.63.807(B)(1)). Extraction mining activities are only permitted with a Shoreline Substantial Development Permit in the Rural Industrial/Port designation and conditionally allowed in the Rural Conservancy and Aquatic designations. Processing facilities for mining are only permitted with a Shoreline Substantial Development Permit in the Rural Industrial/Port designation and conditionally allowed in the Rural Conservancy designation.

An applicant must demonstrate that the mining operation will meet the no net loss of ecological functions standard through avoidance and mitigation of adverse impacts during the course of mining and reclamation (Subsection 19.63.807(B)(3)). Standards further limit mining waterward of the OHWM (Subsection 19.63.807(B)(4)).

4.4.8 Port and Industrial Uses

Likelihood of development: Based on conversations with Port staff and site visits, there are current lease holders that may change uses or develop new facilities at the three Port sites, but specific plans are not known. Undeveloped lands landward of SR 193 could be developed at Wilma, and current uses could be redeveloped to more intensive uses there. The Central Ferry site has undeveloped Port properties which may be developed for new industrial uses during the planning horizon of the Comprehensive Plan. However, the Port has noted that lack of workforce due to the site's isolation represents a challenge to new development.

Application of the SMP: Common effects of industrial development include increased impervious surfaces, increased risk of contaminant spills and water quality contamination, and shoreline modifications, which may affect instream habitat. The majority of port and industrial activity is either prohibited or conditionally allowed in most shoreline designations. The Rural Industrial/Port designation either allows ports and industrial development with a Shoreline Substantial Development Permit or a Shoreline Conditional Use Permit.

The draft SMP includes provisions to minimize the effects of new or redeveloped industrial uses. Specifically, Subsection 19.63.808(B)(3)(a) would require that industrial and port development be located, designed, constructed, and operated in a manner that minimizes impacts to the shoreline, provides for no net loss of shoreline ecological function. Additionally, industrial development and redevelopment shall be encouraged to locate where environmental cleanup and restoration of the shoreline area can be incorporated (Subsection 19.63.808(B)(3)(f)).

4.4.9 Recreational Development

Likelihood of development: As noted in Section 2.1, based on the 2004-2009 Whitman County Parks and Recreation Comprehensive Plan (2004), improvements at Klemgard County Park are possible along Union Flat Creek. Renovations could include replacing the bridge crossing and roofing the large picnic shelter to improve the Park for visitors.

Other renovations to park facilities could occur on federal parks lands.

Application of the SMP: Recreational development can result in increased impervious surfaces, increased use of pesticides and fertilizers, and increased potential for riparian degradation. Per Draft SMP Section 19.63.811, recreational development shall demonstrate achievement of no net loss of ecological functions. Water-oriented recreational uses and nonwater-oriented recreational uses that are on sites separated from the shoreline are generally permitted with a Shoreline Substantial Development Permit. General nonwater-oriented recreational uses are prohibited in the Aquatic environment, and conditional in the others.

The proposed improvement to the roof of the picnic shelter would likely be categorized as routine maintenance and repair activities, which does not require a Shoreline Substantial Development Permit (see Redevelopment, Repair, and Maintenance section below) and has little potential impact on shoreline functions. Redevelopment of the bridge would need to comply with Subsection 19.63.813(B)(4) under Transportation and Parking, which states that shoreline crossings and culverts shall be designed to mitigate impact to riparian and aquatic habitat and shall allow for fish passage. Crossings shall occur as near to perpendicular with the waterbody as possible, unless an alternate path would minimize disturbance of native vegetation or result in avoidance of other critical areas such as wetlands.

Federal actions on federal parks lands would not be subject to the SMP. However, federal actions that could affect listed species would trigger consultation under the Endangered Species Act.

4.4.10 Residential Development

Likelihood of development: Residential uses are extremely limited in the unincorporated County. A small area of residential use occurs along the South Fork Palouse River, adjacent to the City of Pullman. Given land use and zoning, new residential development could occur at very low densities, consistent with the county's agricultural zoning, which allows one residence per parcel. However, higher density residential uses are not anticipated along the County's shorelines.

Application of the SMP: Rural residential development typically is associated with an increased potential for water quality contamination from failed septic systems, as well as increased use of household chemicals, and disturbance of riparian corridors. No residential development is allowed in the Aquatic environment. Rural Conservancy is the only environment that allows all types of residential development, while the other environment designations have variation in the types of residential development allowed, conditional, or prohibited.

Subsection 19.63.810(B)(1) requires that new residential lots created through land division shall comply with all applicable subdivision and zoning regulations, assure that no net loss of ecological functions result from the plat or subdivision at full build-out of lots, prevent the need for new shoreline stabilization or flood hazard reduction measures. Similarly, new residential development shall be located to avoid the need for shoreline stabilization and located, designed, and constructed in a manner that assures no net loss of shoreline ecological functions (Subsection 19.63.810(B)(1)). Residential development will also need to comply with buffer and critical area requirements, which provide additional protection for natural resources.

4.4.11 Transportation and Parking

Likelihood of development: Existing transportation infrastructure includes roads, railroads, bridges, and parking areas. New transportation facilities are not generally anticipated; however, replacement, repair, and maintenance of existing facilities are likely activities in many areas throughout the County's shoreline jurisdiction.

Application of the SMP: New transportation and parking facilities are associated with increased stormwater discharge, increased shoreline crossing structures, and riparian disturbance. The SMP limits development of new transportation facilities or parking areas in shoreline jurisdiction if other options outside of shoreline jurisdiction are available and feasible (Subsection 19.63.811(B)(1 & 2)). When new roads, road expansions, or railroads are

unavoidable, proposed transportation facilities shall be planned, located, and designed to minimize possible adverse effects on unique or fragile shoreline and maintain no net loss of shoreline ecological functions and implement mitigation standards of this SMP (Subsection 19.63.811(B)(1)). Because shoreline crossings have potential direct effects on instream and riparian habitats and functions, shoreline crossings and culverts shall be designed to mitigate impact to riparian and aquatic habitat and shall allow for fish passage (Subsection 19.63.811(B)(4)). Additionally, in order to minimize the proliferation of individual crossings to access private property, crossings that are to be used solely for access to private property shall be designed, located, and constructed to provide access to more than one lot or parcel of property, where feasible, to minimize the number of crossings (Subsection 19.63.811(B)(5)).

Repair and maintenance of transportation facilities are addressed below under "Redevelopment, Repair, and Maintenance."

4.4.12 Utilities

Likelihood of development: Primary utility facilities may be developed to supply existing undeveloped areas with utilities or to upgrade utilities to existing developed areas; however, these are not expected to commonly occur. Regular maintenance and repair of existing utilities is anticipated throughout shoreline jurisdiction.

Application of the SMP: Utilities have the potential to disrupt shoreline functions through an associated need for shoreline armoring, the potential for spills or leakage, and disturbance to riparian areas. In order to limit the spatial extent of any impacts from new utilities, under Subsection 19.63.812(B)(1) of the proposed SMP, preference shall be given to utility systems contained within the footprint of an existing right-of-way or utility easement over new locations for utility systems. Additionally, transmission lines, cables, pipelines, and nonwater-oriented components of production and processing facilities shall be located outside of shoreline jurisdiction, where feasible (Subsection19.63.812(B)(4-6)). Utility projects allowed within shoreline jurisdiction shall be designed to achieve no-net-loss of shoreline ecological function, preserve the natural landscape, and minimize conflicts with present and planned land and shoreline uses (Subsection 19.63.812(B)(3)).

Repair and maintenance of utilities facilities are addressed below under "Redevelopment, Repair, and Maintenance."

4.4.13 Redevelopment, Repair, and Maintenance

Likelihood of development: As described above, the majority of activities within shoreline jurisdiction will likely fall under repair and maintenance. For example, roads, railroads, utilities, and structures all require regular maintenance and repair.

Application of the SMP: Potential impacts from repair and maintenance activities are generally temporary in nature, including such effects as turbidity and other temporary water quality impacts. Repair and maintenance activities are exempt from a Shoreline Substantial Development Permit, but SMP standards still apply. Therefore, ongoing maintenance and repair activities shall be conducted consistent with the SMP provisions. Where expansion or redevelopment is proposed, the required provisions shall be related to and in proportion to the proposal, as determined by the SMP Administrator (Subsection 19.63.813(B)(3)).

4.4.14 Breakwaters, Jetties, Weirs, and Groins

Likelihood of development: Few, if any, new breakwaters, jetties, weirs or groins are anticipated. Infrequent repair and replacement of existing structures may be expected.

Application of the SMP: Breakwaters, jetties and groins are usually intended to alter currents or to deflect or dissipate wave energy. These structures have the potential to cause unintended impacts on natural bank erosion, sediment transport processes, and habitat. Where new structures are permitted, they would need to demonstrate no net loss on an individual project basis (Subsection 19.63.902(B)(1)). Shoreline critical area protection and mitigation sequencing would apply to any proposed project (Subsection 19.63.902(B)(1)).

4.4.15 Dredging and Dredge Material Disposal

Likelihood of development: Siltation behind the dams has raised concerns about flooding, particularly in Lewiston, Idaho, where downtown is protected by a system of levees. The Corps issued a Programmatic Sediment Management Plan and Draft Environmental Impact Statement in 2012. The Corps' preferred alternative included dredging and dredged material management, along with other sediment and system management measures. Alternatives are currently being evaluated.

Smaller dredging projects could occur waterward of Port-owned areas.

Application of the SMP: Dredging activities have potential short-term and long-term effects on the aquatic environment. Temporary effects include elevated turbidity and direct habitat disturbance. Long-term effects stem from the alteration of currents and sediment transport processes, both to on-site and downstream areas.

Federal actions on federal lands would not be subject to the SMP. The Corps action would require Corps permits under the Rivers and Harbors Act and possibly Section 404 of the Clean Water Act, as well as consultation under the Endangered Species Act. Additionally, the action would require state and federal environmental review under NEPA/SEPA, and other State environmental permitting (e.g., Ecology 401 Water Quality Certification and WDFW Hydraulic

Project Approval). In summary, if dredging is necessary, per federal and state permitting, the Corps will be required to mitigate for potential adverse effects of the action on ecological resources.

Any non-federal dredging action or dredging action outside of federally owned lands would be regulated under the proposed SMP. Subsection 19.63.903(B)(3) requires that dredging and dredge material disposal be done in a manner that avoids or minimizes significant ecological impacts. Impacts that cannot be avoided must be mitigated in a manner that assures no net loss of shoreline ecological functions. Additionally, dredge disposal is only permitted if shoreline ecological functions and processes will be preserved, restored, or enhanced, and erosion, sedimentation, floodwaters, or runoff will not increase adverse impacts to shoreline ecological functions and processes or property (Subsection 19.63.903(B)(6)).

4.4.16 Fill and Excavation

Likelihood of development: Fill and excavation could occur over relatively small areas, such as areas associated with repair of existing shoreline stabilization measures. These activities would be most likely to occur in the Rural Industrial/Port environment designation, where development would be concentrated.

Application of the SMP: Fill and excavation can result in a change in habitat conditions and temporary effects to water quality. In some cases, these actions can be used to restore habitats that have been degraded as a result of altered watershed processes or past practices. All fills and excavations shall be located, designed and constructed to protect shoreline ecological functions and ecosystem-wide processes, including channel migration. Any adverse impacts to shoreline ecological functions must be mitigated (Subsection 19.63.904(B)(1)). Fills and excavations may only be permitted when associated with an approved use, and fills waterward of the OHWM are further limited in application under the proposed SMP (Subsection 19.63.904(B)(2-3)).

4.4.17 Shoreline Restoration and Enhancement

Likelihood of development: Several restoration opportunities were identified in the *Shoreline Restoration Plan*. These opportunities originated in planning documents, such as the *Palouse Watershed Plan* (HDR and EES 2007), *Snake River Salmon Recovery Plan for Southeast Washington* (Snake River Salmon Recovery Board 2011), the *Hangman Creek TMDL* (Washington State Department of Ecology 2011), and *Salmonid Habitat Limiting Factors Water Resource Inventory Areas 33 (Lower) and 35 (Middle) Snake Watersheds, and Lower Six Miles of the Palouse* (Kuttel 2002). Many of the proposed projects are likely to be implemented in the 20-year planning horizon. These include projects to: improve instream habitat complexity, set back dikes, reduce riparian impacts, correct fish passage barriers, and implement best management practices.

Application of the SMP: A County policy identifies the intent to promote restoration and enhancement actions that improve shoreline ecological functions and processes and target the needs of sensitive plant, fish and wildlife species (Subsection 19.63.905(A)(1)). Shoreline restoration and enhancement projects must be designed using the best available scientific and technical information, and implemented using best management practices in order to avoid unintended adverse effects (Subsection 19.63.905(B)(1)). Long-term maintenance and monitoring must also be included in restoration or enhancement proposals (Subsection 19.63.905(B)(1)). In order to eliminate disincentives to restoration resulting from any landward shifts in the OHWM, relief may be granted under RCW 90.58.580.

4.4.18 Shoreline Stabilization

Likelihood of development: Shoreline stabilization measures are currently present along much of Snake River and in a few areas of the Palouse River. There is some stabilization in other areas of the County, but primarily only at stream crossings or perhaps along utility outfalls. New shoreline stabilization is anticipated to be rare; however, repair and replacement of existing shoreline stabilization structures may be more common.

Application of the SMP: Shoreline stabilization measures tend to result in the simplification of shoreline habitat complexity and increased flow velocities along the shoreline. The occurrence of new stabilization measures will be limited because new development must be located and designed to avoid the need for future shoreline stabilization, if feasible (Subsection 19.63.906(B)(1)), and new stabilization shall only be permitted to protect an existing primary structure or new structure that cannot be placed so as to avoid the need for stabilization (Subsection 19.63.906(B)(4)). All proposals for shoreline stabilization structures, both individually and cumulatively, must not result in a net loss of ecological functions, and must be the minimum size necessary. Soft approaches shall be used unless demonstrated not to be sufficient to protect primary structures, dwellings, and businesses (Subsection 19.63.906(B)(2)).

An existing shoreline stabilization structure, hard or soft, may be replaced with a similar structure if there is a demonstrated need to protect principal uses or structures from erosion caused by currents or waves. While replacement of shoreline stabilization structures may meet the criteria for exemption from a Shoreline Substantial Development Permit, such activity is not exempt from the policies and regulations of the SMP (Subsection 19.63.906(B)(6)).

Repair and maintenance of existing shoreline stabilization measures may be allowed. Repair and maintenance includes modifications to an existing shoreline stabilization measure that are designed to ensure the continued function of the measure. Any additions to, increases in the size of, or waterward encroachment of existing shoreline stabilization measures shall be considered new structures. Areas of temporary disturbance within the shoreline buffer shall be

expeditiously restored to their pre-project condition or better. While repair and maintenance of shoreline stabilization structures may meet the criteria for exemption from a Shoreline Substantial Development Permit, such activity is not exempt from the policies and regulations of the SMP (Subsection 19.63.906(B)(7)).

5. NET EFFECT ON ECOLOGICAL FUNCTION

This CIA indicates that future growth is likely to be limited, and where it does occur, it will be targeted in specific environment designations, waterbodies, and shoreline reaches. This analysis can help inform the County of potential future shoreline impacts and the importance of specific proposed SMP provisions.

The primary types of anticipated development include the following: 1) industrial development and redevelopment within the Rural Industrial/Port environment designation on the Snake River, 2) dredging of the Snake River for flood control purposes, 3) recreational improvements in the Shoreline Parks environment designation, and 4) regular maintenance and repair of existing facilities throughout the County.

The proposed SMP is expected to maintain existing shoreline functions within Whitman County while accommodating the reasonably foreseeable future shoreline development. Other local, state and federal regulations, acting in concert with this SMP, will provide further assurances of maintaining shoreline ecological functions over time. The *Shoreline Restoration Plan,* and actions described therein, will ensure that incremental losses that could occur despite SMP provisions do not result in a net loss of functions, and these restoration actions may result in a gradual improvement in shoreline functions.

As discussed above, major elements of the SMP that ensure no net loss of ecological functions fall into four general categories: 1) environment designations that focus development on specific areas with existing development and shoreline alterations; 2) shoreline critical areas regulations that protect sensitive areas through appropriate science-based buffers and limitations on new uses; 3) mitigation sequencing, which directs potential development to first avoid, then minimize, and finally mitigate for unavoidable impacts; and 4) shoreline use and modification provisions, which ensure that likely development is guided by regulations that will protect existing functions while allowing priority shoreline activities to occur. The *Shoreline Restoration Plan* identifies ongoing and planned voluntary restoration that will provide an opportunity to improve shoreline conditions over time.

Given the above provisions of the SMP, including the key features listed above, implementation of the proposed SMP is anticipated to achieve **no net loss of ecological functions in the shorelines of Whitman County.** Voluntary actions identified and prioritized in the *Shoreline Restoration Plan* will provide the opportunity to enhance and restore shoreline functions over time.

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